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In replying please address:

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January 20, 1960

Dear Sir:

In accord with recent discussions with your technical representatives, this letter describes a proposed program of further research under Task Order No. NN that would be directed toward the procurement, installation in a Volkswagen panel truck, and evaluation of selected specialized radio-communications equipment, and toward the preparation of an operator's manual for the primary equipment systems in the panel truck.

On October 5, 1959, Task Order No. NN was undertaken to design, develop, install, and evaluate an experimental air-conditioning and ventilation system for a Volkswagen panel truck and to modify the truck for certain specialized conditions of use, which were described in our letter and proposal dated September 16, 1959. In our letter dated December 30, 1959, a proposed program of additional research was described that would be directed toward investigating and, if possible, providing (1) the means whereby the occupants of the Volkswagen panel truck would be able to observe closely the activity in the area immediately surrounding the truck during the day and at night; and (2) a special antenna for the vehicle specialized radio-communications equipment (which was to be furnished by your technical representatives). Subsequently, in our letter dated January 8, 1960, we proposed that further

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research be performed that would be directed toward the design, preparation, and installation, in the Volkswagen panel truck, of an experimental infrared observation system.

During recent discussions with your technical representatives, we have been asked to give consideration to the performance of additional effort in two more areas related to the preparation of the specially equipped Volkswagen panel truck. Your technical representatives had expected to be able to furnish appropriate radio-communications equipment from another source. However, at present, the time delay involved in obtaining this equipment from that source is inordinately long, and discussions of the associated problems have revealed that we could assist with the procurement of this equipment. Also, it now appears that an operator's manual should be supplied with the specially equipped Volkswagen panel truck, to help instruct relatively unknowledgeable personnel in the satisfactory operation of the different equipment systems. Accordingly, presented herein is a proposed program of further activity under Task Order No. NN that would be directed toward the procurement, installation, and evaluation of appropriate radio-communications equipment, and the preparation of a suitable operator's manual.

Your technical representative has given us a detailed description of the necessary radio-communications equipment. On the basis of an exploration of sources for obtaining such equipment expeditiously, we propose to procure the appropriate specialized radio-communications equipment by placing a fixed-price purchase order in response to the A.B.S. Electronics proposal, which is attached for the record. At the time the purchase order was let, additional necessary information, such as the specific frequencies required, would be made available to A.B.S. Electronics.

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After this equipment was received, it would be installed in the Volkswagen panel truck, and subsequently, its performance would be evaluated. Essentially, the installation effort would consist of positioning the equipment properly in the panel truck, preparing any necessary associated cabinets, etc., and providing the appropriate electrical connections. This equipment would then be tuned and checked out by our personnel in our laboratories. As currently contemplated, the proposed evaluation would be generally concerned with a reasonable amount of transmitting and receiving, to and from selected locations. The details of the proposed evaluation would be discussed with your technical representatives. It is anticipated that they would provide considerable guidance particularly with regard to this aspect of the proposed effort. Also, it is likely that the proposed evaluation would be conducted with your technical representatives present. Minor modifications, if needed, would be made to the equipment and installation, within the limits of the funds and time provided.

With regard to the proposed preparation of an appropriate operator's manual, an examination of the present and proposed systems for the panel truck shows that the main ones are the air-conditioning and ventilating system, the observation system, the electrical system, the specialized radio-communications system, and the vehicle system. It is currently planned that, in the proposed manual, each system would be described in terms of its major parts, the operation of its parts, and the possible maintenance which could be performed in the field, if necessary. Photographs would be used to simplify the instructions and explanations, and pictorial and schematic drawings would be included when necessary. As discussed with your technical representatives, catalogues of purchased equipment would be furnished

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wherever possible, and these would be referenced in the manual. As currently contemplated, it is likely that the proposed manual would be a fairly lengthy booklet.

Every effort would be made to organize and write the proposed manual so that it would present the appropriate operational and maintenance procedures in simple, easily understandable language, in an attempt to facilitate satisfactory operation of the various systems by relatively un-knowledgeable personnel. Before the proposed manual was finalized, a draft would be provided to your technical representatives for their comments and suggestions. Subsequently, a reasonable, mutually agreed upon number of copies of the proposed manual would be prepared and furnished to your technical representatives. It is our understanding that these copies would be submitted at the time that the specially equipped panel truck was made available to your technical representatives.

Again, it is emphasized that every effort would be made to conduct the proposed activity expeditiously.

Accordingly, it is proposed that the Task Order No. NN agreement be amended to provide for an additional two-month period of research, thus, extending the ending date for the agreement through June 30, 1960. It is currently anticipated that an increase in the appropriation of \$12,720, including an increase in the fixed fee of \$720, would be needed to fund the additional effort proposed herein. A general breakdown of the estimated costs is attached.

Aside from the above, no other changes in the Task Order No. NN contract are proposed at this time. Of course, the proposed amendment would

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continue our period-basis research agreement, consistent with our current contractual arrangements.

If you should have any questions with regard to the above, please do not hesitate to call us. Any inquiries of a contractual nature may be directed to

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Very truly yours,

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Vice President

EES:mlm

In Duplicate

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Proposal of [] to the U. S. Government.
 For Research Further research under Task Order No. NN.

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Based upon a period-basis Contract for a research period ~~at~~ through June 30, 1960.

(Including time for submission of all reports. The proposed contract will not provide for earlier conclusion of the research.)

ESTIMATED COSTS

We expect that the cost of this research for the period indicated above may be distributed approximately as set forth hereon, subject to the understanding that this allocation is merely an estimate, and actual costs incurred may vary from the categories shown. We have determined that these estimates are reasonable and consistent with []'s established policies in its research for the various Government agencies, which policies are briefly discussed below and will be followed in determination of our actual costs hereunder.

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Materials & Supplies, etc.

\$ 2,750

(Including any equipment which may be purchased as necessary in performance of the research. Charges of \$25 or less are excluded from this item.)

Use of Equipment and Technical Services, Travel, and Misc.

\$ 1,350

(Including applicable costs of technical research and service divisions, and use of technical equipment, except that any undistributed balances of these accounts will be included in overhead. Cost of travel includes reasonable actual subsistence expenses and the actual cost of transportation. An allowance of up to 8¢ per mile for all necessary travel by privately owned conveyance is included in lieu of the cost of such travel.)

Salaries & Wages

(Including our predetermined accrual for vacation, holiday, and sick-leave pay, pensions, and social security.)

Type of Employee	No. of Man-Months	Estimated Cost
Supervision	3/4	\$ 795
Research Engineers	3-1/3	2,500
Lab. Assistants	3	1,260
Steno., Clerical, Shop & Photo., etc.	1	415
Total Salaries & Wages		<hr/> \$ 4,970

Overhead

59 per cent of salaries and wages, as they are defined above. Provisional monthly reimbursement will be at the rate of 59 per cent of salaries and wages, as so defined, or at such other provisional rate as may from time to time be mutually agreed upon with the Government's audit representatives. This is a provisional rate for current reimbursement, which we have arrived at by negotiation with Government representatives, and it will be subject to retroactive revision to the "actual" rate agreed upon with them for each calendar year following a detailed audit for that year. The item of overhead includes general research, charges of \$25 or less for materials and supplies, and other categories of costs we customarily include in our overhead account. Cash discounts on all purchases will be credited to overhead, instead of to the amount of the purchase. Scrap of appreciable value will be credited directly to the project. All other scrap will be credited to the overhead account, in which the Government participates.)

\$ 2,930

Total Estimated Cost

\$12,000

Fixed Fee

\$ 720

*Please let us have your acceptance in our hands by March 1, 1960. Contract Price

\$12,720

Unless we extend the time, your acceptance after that date will be subject to agreement.

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COMMUNICATION RADIO

PHONE: FR 2-6725

A. B. S. ELECTRONICS525 MEADOWWAY PARK
WORTHINGTON, OHIO

January 15, 1960

A PROPOSAL

This proposal involves the delivery of one mobile radio communication unit designed for operation in a motor vehicle with 12 volt negative ground electric system in accordance with the following specifications and limitations .

- I Physical configuration :
The unit will not be larger than 6" by 14" by 18"—including the cable connectors and handle. The unit will be designed for extended local control with control unit, speaker, ear phones and microphone available to the operator. Cable length , 15 feet . The unit will be General Electric, Progress Line , (Vacuum tubes) with transistorized power supply. The unit will be furnished with military hand type mobile microphone , less antenna .
- II Transmitter power output :
30 watts radiated .
- III Modulation :
PM : 15 KC deviation for 100 % modulation .
- IV Band width :
40 KC
- V Multi frequency transmitter operating range :
Not to exceed .3% of operating frequency (180 KC at 60MC)
- VI Receiver sensitivity :
20 db quieting with .5 microvolt at antenna terminal.
- VII Receiver selectivity :
Wide band : (40KC) Adjacent channel 85 db down . Response 30 KC removed from channel center down 100 db. Allowable frequency separation for multichannel operation is .4% of operating frequency (240KC at 60 MC)
- VIII Frequency range :
54 to 60 MC (Standard unit modified)
- IX Number of transmit and receive channels :
4 Transmit and 4 Receive .

COMMUNICATION RADIO

PHONE: FR 2-6725

A. B. S. ELECTRONICS825 MEADOWAY PARK
WORTHINGTON, OHIO

- X Exact frequencies :
Exact frequencies of operation must be known at the time of award. Any unit operating above 54 MC will require modification and special crystals. Special crystals are not immediately available from equipment supplier and must be purchased directly from the crystal supplier. After modification the equipment supplier would not be obligated to supply the special crystals required.
- XI Earphones :
Low Z earphones will be furnished with speaker mute jack and plug.
- XII Spare tubes :
A spare tube will be furnished for each socket. 2 spare transistors for the power supply will be furnished.
- XIII A suitable test meter, simplified step by step, alignment data, complete schematic diagrams and technical data will be furnished.
- XIV Limitations :
Upper frequency limit : 60 MC.
ABS Electronics can not and will not accept responsibility or penalty for any delay in delivery resulting from labor disputes or Acts Of God.
- XV Delivery :
45 days after award.
- XVI Price :
For operation above 54 MC \$ 1500.00
This price includes the possibility of reasonable modification in addition to those outlined here and the probability of air travel to meet the delivery schedule.
- XVII This proposal will not be in effect after March 1, 1960
- XVIII Discount :
A 2 % discount may be taken if payment is made within 30 days of invoice date.

COMMUNICATION RADIO

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PHONE: FR 2-6735

A. B. S. ELECTRONICS
625 MEADOWAY PARK
WORTHINGTON, OHIO

NOTE :

Compatibility with Motorola T 71 GJT 1000 SP

This model number indicates Motorola Motrac with modifications .

The SP indicates " Special "

Compatibility can not be guaranteed unless the
S P data is known .

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FILE 00-113 D

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NO DETAILED INSTRUCTION
BOOK - CK OFF LIT ONLY +
MFG LITERATURE.

RADIO, INSTRUCTIONS, MINI. ENCLOSURE.

TELECON 2 M^cCARTHY - 21 JANUARY 1960.

1. DO NOT DESIRE DETAILED INSTRUCTION MANUAL. RECIPIENT OF VEHICLE WILL WRITE MANUAL IF DESIRED.
2. INFORMED M^cCARTHY THAT ONLY A MINIMUM OF INSTRUCTIONS WILL BE WRITTEN AND ON THE TECH. LEVEL.
3. MADE ARRANGEMENTS 2 BNF FOR REQUOTE ON COMM EQUIP. ONLY APPROX \$4000 FOR COMM \$8000 FOR DETAILED INSTRUCTIONS.

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THIS PROPOSAL NOT
USED, *for*

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